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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/611,618

06/30/2003

Saikumar Jayaraman

42P15936

1378

8791

7590

04/18/2005

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EXAMINER

TRINH, HOA B

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,618

Applicant(s)

JAYARAMAN, SAIKUMAR

Examiner

Vikki H. Trinh

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-11 is/are allowed.
- 6) ☒ Claim(s) 1,2,12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (5,834,848) in view of Rojstaczer et al. (5,935,372).

Iwasaki (5,834,848) discloses an apparatus having a first substrate 10, 12 (fig. 5) with a first set of contact points 12b ; a second substrate 21 (fig. 5) with a second set of contact points 21a coupled to the first substrate 12 (fig. 5) through interconnections 31 (fig. 5) between the first set of contact points 12b (fig. 5) and the second set of contact points 21a (fig. 5); and an adhesive agent or buffer layer 41 (col. 10, lines 48-52) formed between the first substrate 12 and the second substrate 21 (fig. 5).

However, Iwasaki does not explicitly teach a composition disposed between the first substrate and the second substrate comprising a siloxane-based aromatic diamine.

Rojstaczer et al. (5,935,372) teaches an adhesive composition 3 (fig. 1) for bonding parts in a semiconductor package, wherein the composition has a reaction between a siloxane-based aromatic diamine and epoxy resin (col. 10, lines 48-52).

Iwasaki and Rojstaczer are in the same field of semiconductor packaging with adhesive bonding.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the adhesive agent of Iwasaki with the adhesive composition, as taught by Rojstaczer, so as to provide a better sealing solution for use in chip packages (Rojstaczer, col. 1, lines 30-35).

As to claim 12, the second substrate 21 (fig. 5) is an integrated circuit.

As to claim 13, the first substrate 12 comprises a circuit package 10 (fig. 5) and the second substrate 21 has a printed circuit board (fig. 5).

Allowable Subject Matter

5. Claims 3-11 are allowed over the prior art of record.

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6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or fairly suggest either in singly or in combination an apparatus having a composition with a siloxane-based aromatic diamine and an epoxy resin formula with groups R1 and R2 are independently selected from a hydrogen, an alkyl, a substituted alkyl, a cycloaliphatic, an alkyl ether, an aryl, a substituted aryl moiety, and an -OR7 moiety, wherein R7 is selected from an aliphatic and an aromatic moiety, wherein groups R3, m, R5, and R6 are independently selected from a hydrogen, an alkyl, a substituted alkyl, a cycloaliphatic, an alkyl ether, an aryl, and a substituted aryl moiety, and wherein groups R8 and R9 are independently selected from a hydrogen, an alkyl, a cycloaliphatic, an alkyl ether, an aryl, and a substituted aryl moiety, and other element in the claims.

Response to Arguments

7. Applicant's arguments filed Jan. 26, 2005, have been fully considered but they are not persuasive. In the remarks, applicant argues that the rejection of claims 1-2 and 12-13 under 35 U.S.C. section 103(a) does not provide adequate motivation. On the contrary, as the examiner stated in the above rejection, Iwasaki teaches every elements of the claims, except that the composition disposed between the first substrate and the second substrate comprising a siloxane-based aromatic diamine as recited in Applicant's claim 1. To cure the deficiency of Iwasaki, the examiner found the teaching of Roistaczer, who discloses an adhesive composition of made from siloxane-based aromatic diamine so as to provide a better sealing solution for use in chip packages. Note that Iwasaki and Roistaczer are analogous art. Hence, it would have been obvious to one of ordinary skills in the art to combine the teachings of Iwasaki and Roistaczer to

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create the elements as claimed in the claim 1 of the present application. Therefore, the examiner maintains the rejection of claim 1.

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the adhesive in Iwasaki is made of epoxy resin and Roistaczer teaches an adhesive that can be made from both epoxy resin and siloxane-based aromatic diamine. Therefore, Roistaczer cures the deficiency of Iwasaki.

9. For the foregoing reasons, the examiner maintains the rejection of claims 1-2 and 12-13.

10. **Conclusion**

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

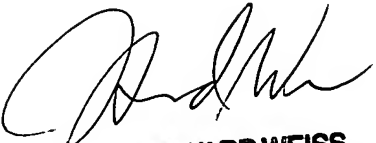
Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests

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to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Vikki Trinh,
Patent Examiner
AU 2814



**HOWARD WEISS
PRIMARY EXAMINER**